

:: by Donnie Byers

practice run

Charles Haworth, M.D.,
uses virtual prep for
real back surgery



Millions of surgical procedures are performed each year in the U.S. with most requiring some sort of recovery period. So it would make sense to make surgery as minimally invasive as possible to shorten the healing process.

Charles Haworth, M.D., Cape Fear Valley's new Director of Neurosurgery, is a firm believer in the strategy.

"You can make a big incision and take all the muscles down," he said, "or you can make a smaller incision that's less painful, bleeds less and has less chance of infection."

Dr. Haworth has spent the past 16 years helping develop computer navigation software that does just that. The Stryker Surgical Navigation System was originally developed as spinal navigation technology, but is finding other uses in the operating room.

The system combines complex software and real-time imaging technology to map the spine area before surgery, similar to how a GPS unit would map out a travel route. A pencil-like device makes the mapping almost easy.

The surgeon places the pointer device on various spots on the skin, along the spine, to create a three-dimensional snapshot of the vertebrae. The data is then sent to a computer to visually recreate the spine in images on a monitor that can be analyzed more easily.

The Stryker software then compares the real-time images to previous CT scans of the spine to help create a surgery plan. The process can help determine incision locations, types of surgical tools or hardware needed, and even how long the surgery might last.

"It's like virtual reality," Dr. Haworth said. "You can plan out everything, even before you do it."

Precision is important when operating on something as delicate and complex as the human spine. Metal screws could break, miss their target or accidentally strike a nearby nerve.

Dr. Haworth has performed more than 1,200 spinal navigation cases since 1999. He has become so adept at the procedure that he is a nationally recognized expert for the Stryker system. Physicians from all over the U.S. and abroad have come to him to learn about the cutting-edge technology.

He's also helped develop a technique to take CT scan-quality images of the spine during actual operations. The technique not only saves time and money, but also produces considerably less radiation than traditional CT scans.

All of Dr. Haworth's procedures have been spinal, but he says the Stryker system could also be used on the head, neck, brain and other parts of the body. As a result, Cape Fear Valley's new neurosurgery chief would like to bring in other specialty surgeons who could utilize the technology.

He envisions a spine treatment and wellness center, similar to the health system's Cancer Treatment & CyberKnife Center. The goal, he said, is to do more cutting-edge surgery at Cape Fear Valley so it will become a destination-medical facility, like larger university-affiliated hospitals.

It shouldn't be too hard. Dr. Haworth previously worked for Duke University Medical Center and UNC Hospitals and already has patients from all over southeastern North Carolina and states as far away as Florida.

"We want people to come in and see what we're doing here at Cape Fear Valley," he said. "The sky's the limit."

Charles Haworth, M.D.

Cape Fear Valley Director of Neurosurgery

High Point native

Married with three children

Neurosurgeon

Medical degree from Duke University Medical Center

Surgical Internship at the University of Southern California, Los Angeles County Hospital in Los Angeles, Calif.

Residency at University of Virginia Medical Center in Charlottesville, Va.

Gamma Knife Fellowship at the University of Virginia Medical Center

Active duty naval commander at Bethesda National Naval Medical Center in Bethesda, Md. (1990-1993)